PDR RID Report

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Document PDR Presentations - Ingest Subsystem & Release A DAAC LANs; . PDR Document - Trade-off Studies Analysis Data for

Section N/A **Page** PDR Slides CG-17, CG-21, EJ-3, & EJ-5; Sections 6.1, **Figure Table** N/A

RID ID PDR 478
Review SDPS
Originator Ref IVV-LCM-02
Priority 2

Category Name Segment-Level **Actionee** HAIS

Sub Category

Subject RMA and failure modes affects analysis/critical items list

Description of Problem or Suggestion:

In two presentations at PDR and in several sections in the trade studies document RMA is mentioned as a criterion for design evaluation and in the case of the Ingest Subsystem analysis results are cited. It's unclear whether sufficient RMA and failure modes affects analyses have been performed to demonstrate that the preliminary design can meet requirements.

Originator's Recommendation

IV&V recommends that HAIS:

1) perform sufficient RMA analysis if they have not already done so;
2) conduct failure mode analyses using the system simulation model to determine recovery times and system effects (e.g., data loss) after failures occur; and
3) publish technical papers on the analyses.

GSFC Response by: **GSFC Response Date**

HAIS Response by: Eisenstein **HAIS Schedule**

HAIS R. E. B. Ngeun **HAIS Response Date** 5/16/95

1) Detailed ECS RMA analyses have been performed and are documented in the following PDR deliverables:
- DID 515, Availability Models / Predictions
- DID 516, Reliability Predictions
- DID 517, Failure Modes & Effect Analyses & Critical Items List
- DID 518, Maintainability Predictions

2) A failure mode analysis (FEMA) is required to be conducted only on the Critical Real Time Function of the Flight Operations Segment (FOS), see paragraph 5.3.4 of the Performance Assurance Requirements for the ECS, document 420-05-03. However, DID 513 (ECS Hazard Analysis) and DID 520 (Software Critical Items List) examined the hazard aspect of the Loss of Mission Essential Data and revealed that receipt of essential science data (L0 data) will be ensured through redundant data captured at the EDOS Data Production Facility (DPF) and the SDPS Ingest Subsystem.

3) The results are published in the above documents.

Status **Closed** **Date Closed** **6/8/95** **Sponsor** **Szczur**

****** **Attachment if any** ******